

01910/170000

LEARY

KEYSPAN ENERGY DELIVERY NEW ENGLAND

Direct Testimony of Ann E. Leary

Exhibit KEDNE/AEL-1

D.T.E. 03-40

1 **I. INTRODUCTION**

2 **Q. Please state your name and business address.**

3 A. My name is Ann E. Leary. My business address is 52 Second Avenue, Waltham,
4 Massachusetts 02451.

5 **Q. By whom are you employed and in what capacity?**

6 A. I am the Manager of Rates for KeySpan Energy Delivery New England
7 ("KEDNE"). As the Manager of Rates, I am responsible for preparing and
8 submitting various regulatory filings with the Department of Telecommunications
9 and Energy (the "Department") on behalf of KeySpan's New England local
10 distribution companies, including Boston Gas Company d/b/a KeySpan Energy
11 Delivery New England ("Boston Gas" or the "Company"). This includes Cost of
12 Gas Adjustment ("CGA") filings, Local Distribution Adjustment Charge
13 ("LDAC") filings and reconciliations, energy conservation, performance-based
14 revenue calculations, lost-base revenues, and exogenous cost filings.

15 **Q. Please briefly describe your educational background and business**
16 **experience.**

17 A. I received a Bachelor of Science in Mechanical Engineering from Cornell
18 University in 1983. In 1985, I joined the Essex County Gas Company as Staff
19 Engineer. In 1987, I became a planning analyst and eventually accepted the

1 position of Manager of Rates. Following the merger with Eastern Enterprises in
2 1998, I became Manager of Rates for Boston Gas and then subsequently for
3 KeySpan Energy Delivery New England.

4 **Q. Have you previously testified before the Department of Telecommunications**
5 **and Energy or any other regulatory agency?**

6 A. Yes. I have testified in several ratemaking and regulatory proceedings before the
7 Department of Telecommunications and Energy (the "Department"). Most
8 recently, I testified in KeySpan Energy Delivery New England, D.T.E. 02-32 and
9 Colonial Gas Company, D.T.E. 02-58.

10 **Q. What is the purpose of your testimony?**

11 A. I am testifying on behalf of Boston Gas on the post-test year revenue and gas-cost
12 adjustments and the Company's Cost of Service Study (the "COSS").

13 **Q. Please describe the exhibits attached to your testimony.**

14 A. My testimony is supported by the following exhibits:

15	KEDNE/AEL-2	Revenue Adjustments
16	KEDNE/AEL-3	Cost of Gas Adjustments
17	KEDNE/AEL-4	Cost of Service Reconciliation
18	KEDNE/AEL-5	Allocated Cost of Service Study
19	KEDNE/AEL-6	Allocated Cost of Service Study – Local Production
20		and Storage Costs
21	KEDNE/AEL-7	Handbook of Allocators
22	KEDNE/AEL-8	Allocated Cost of Service Study – Customer
23		Component

1 **Q. How is your testimony organized?**

2 A. The remainder of my testimony is organized into two sections. Section II
3 describes the adjustments for known and measurable changes in the Company's
4 test-year revenues and gas costs. Section III describes the design and results of
5 the Company's COSS.

6 **II. TEST YEAR REVENUE ADJUSTMENTS**

7 **Q. Please explain the general purpose of the weather adjustment.**

8 A. The weather adjustment normalizes revenues and billing determinants to account
9 for warmer-than-normal or colder-than-normal weather experienced during the
10 test year. When weather varies from normal, the throughput and revenues of a gas
11 utility will be higher or lower than would be expected during a "normal" year.
12 The weather adjustment eliminates the effects of weather by calculating the
13 throughput and associated revenues that would have occurred had the weather
14 been normal. These normalized volumes are then used as billing determinants in
15 setting rates and the associated revenues are used to calculate the test-year revenue
16 deficiency.

17 **Q. What is your weather adjustment for this proceeding?**

18 A. The distribution of actual versus normal degree days in the test year requires an
19 upward volume adjustment of 26,042,296 therms, or 2,604 BBTus, and a
20 distribution revenue adjustment of \$5,520,760. This adjustment is shown on
21 Exhibit KEDNE/AEL-2, at pages 2 and 3.

1 **Q. How did you determine the weather adjustment?**

2 A. Consistent with the method used by the Company in Boston Gas Company,
3 D.P.U. 96-50 (Phase I) (1996) ("D.P.U. 96-50), the Company conducted an
4 analysis on a customer-by-customer basis for all classes except G-44 and G-54.
5 The Company weather-normalized each bill issued during each month of the test
6 year for customers in all weather-sensitive classes. Actual billing usage (i.e., the
7 actual number of therms billed to each customer) was divided into base load and
8 heating use for each customer. Base load, obtained from the billing system and
9 used for bill estimation procedures, is calculated annually for each customer based
10 on summer consumption. Actual heating use is the difference between billed use
11 and base load. Normal heating use was derived by multiplying actual heating use
12 by the ratio of normal degree days to actual degree days for the associated billing
13 period for each customer. Normal volumes are the sum of base load and normal
14 heating use.

15 **Q. How does the Company define normal degree days?**

16 A. The Company calculated normal degree days by averaging the daily degree days
17 over the 20 year period from January 1983 through December 2002.

18 **Q. Why are volumes apportioned to usage blocks?**

19 A. For most rate schedules, the Company's rate structure has two usage blocks, i.e.,
20 the headblock and tailblock, each with different rates. Once the total throughput
21 was weather normalized the Company distributed the normal usage to the

1 appropriate headblock and tailblock for each rate class. The Company then
2 calculated the weather normalization throughput adjustment by subtracting the
3 actual headblock and tailblock throughput from the normalized headblock and
4 tailblock throughput for each rate class for each month.

5 **Q. Once the Company determined the normalized throughput for each rate**
6 **class, how did the Company calculate the weather-normalized base-rate**
7 **increase?**

8 **A.** To calculate the normalized base-rate increase, the Company multiplied the
9 appropriate headblock and tailblock volumetric rate for each rate class by the
10 corresponding normalized throughput adjustment. Therefore, the weather
11 adjustment is the difference between the actual and normal base-rate revenue for
12 all schedules except G-44 and G-54.

13 **Q. How did the Company derive the normal base revenues for rate classes G-44**
14 **and G-54?**

15 **A.** Customers taking service under the G-44 and G-54 rate tariffs are currently billed
16 on a demand basis, rather than a volumetric basis. The demand charge is
17 calculated based on the customer's Maximum Daily Contract Quantity ("MDCQ")
18 in a relevant historical period. Specifically, each peak and off-peak season, the
19 Company calculates the MDCQ for each customer using the customer's actual
20 throughput from the prior peak or off-peak season. Customers are then billed a
21 demand rate based on the calculation of the MDCQ in the prior period.

1 To derive the weather impact on the G-44 and G-54 classes, the Company
2 weather-normalized the aggregate MDCQ for each class, rather than the historical
3 volumetric throughput. To do this, the Company calculated the average daily use
4 for each customer class by dividing the normal monthly volumes by the average
5 number of billing days in each month. The Company then multiplied the highest
6 average daily use in the peak and off-peak periods by 30 to derive the average-
7 month basis and then divided by 21 to place the result on an MDCQ basis. This
8 calculation was repeated by substituting actual monthly volumes for the normal
9 monthly volumes to derive a calculated actual MDCQ. The ratio of normalized
10 MDCQ to calculated actual MDCQ was then multiplied by the actual billed
11 MDCQ to calculate the normal billed MDCQ. The difference between the
12 normal-billed MDCQ and the actual-billed MDCQ was then multiplied by the
13 effective MDCQ rate. This resulted in the G-44 and G-54 weather margin effect.
14 These calculations are shown on Exhibit KEDNE/AEL-2, at pages 4 and 5.

15 **Q. What is the billing day adjustment?**

16 A. The billing day adjustment accounts for the revenue impact of the difference
17 between the actual number of billing days (365.45) in the test year and the number
18 of billing days (365.25) in a normal year.

19 **Q. How did the Company determine the billing day adjustment?**

20 A. The first step was to determine the difference between the test-year billing days
21 and normal billing days. I calculated the adjustment in two pieces: (1) the portion

1 associated with heating load, and (2) the portion associated with baseload. The
2 heating portion was calculated by averaging January and December billing degree
3 days per day, and multiplying the result by the average December and January
4 heating increment to determine average daily heating use. The average daily
5 heating use was then multiplied by the difference in billing days to calculate the
6 heating portion of the billing day adjustment. The heating increment used above
7 was determined by subtracting August base load from actual January and
8 December billing usage to obtain heating use. This heating use was divided by
9 actual billing degree days for each month and the result was then averaged.

10 The baseload portion was determined by multiplying the billing day difference by
11 the August base use per day. The resulting volume was added to the heating
12 adjustment. This total was then multiplied by an average of January and
13 December revenue rates to obtain the billing day revenue adjustment. This
14 calculation is shown in Exhibit KEDNE/AEL-2, at page 6. The billing day
15 adjustment reduces test-year revenues by \$164,726.

16 **Q. What are the Other Revenue Adjustments that the Company made to test**
17 **year revenues?**

18 A. In addition to the adjustments described above, the Company adjusted test year
19 revenues for customer charges, termination of a large special contract, annualized
20 late payment charges, weather-stabilization revenues, performance-based
21 ratemaking revenue, energy efficiency programs, and non-firm revenue. My
22 testimony covers each of these adjustments in turn.

1 **Q. Please explain the revenue adjustment for Customer Charges.**

2 A. The Company reduced test-year revenues by \$543,219 to account for the change
3 in the calculation of customer bills resulting from the conversion to the Customer
4 Related Information System ("CRIS") in July 2002. This calculation is set forth
5 in Exhibit KEDNE/AEL-2, at page 7. For the first six months of the test year, the
6 Company billed its customers using the previous Customer Service System
7 ("CSS") billing system, which treated any billing period between 28 days and 34
8 days to a month. For the last six months of the test year, and from this time
9 forward, the Company is using the CRIS system. The bill-calculation routine in
10 CRIS calculates all monthly customer bills on a per-day basis depending on the
11 number of days in a customer's billing cycle. This change in the bill calculation
12 routine has an impact on the amount of revenue the Company bills through the
13 customer-charge portion of the rates. The Company calculated the impact of this
14 change on the revenues billed during the first six months of the test year by
15 comparing what was actually billed through the customer charges to what would
16 have been billed if the CRIS system were in place. To do this, the Company
17 recalculated revenues using the customer charges that became effective with the
18 conversion to CRIS and the actual billing days for the months of January through
19 July. The difference between the revenues using the CRIS calculations and the
20 weather normalized revenue from the CSS system results in the customer charge
21 adjustment. The customer-charge adjustment reduced test-year revenues by
22 \$543,219.

1 **Q. Please explain the revenue adjustment for the termination of the Exelon**
2 **special contract.**

3 A. In the Company's last base rate proceeding, D.P.U. 96-50, the Department
4 included in operating revenues approximately \$9.1 million in revenue associated
5 with non-tariff firm transportation contracts (i.e., "special contracts") that were in
6 place at the time that the Department set the Company's base rates. In the test
7 year, special-contract revenues totaled \$16.6 million, and consistent with
8 Department precedent, the Company has incorporated these revenues into the
9 revenue requirement. However, test-year revenues include approximately \$3.7
10 million in revenues relating to the Company's contract with Exelon New England
11 Holdings, LLC ("Exelon"), formerly known as Sithe New England Holdings LLC.

12 Under this contract, the Company currently provides firm transportation service to
13 the Exelon New Boston Power Plant in South Boston and to the Mystic 7 Power
14 Plant in Everett. However, on March 25, 2003, the Department approved an
15 amendment to the original agreement in GC 03-03, which provides for a
16 termination date of March 31, 2004, which is prior to the midpoint of the rate
17 year. Exelon has informed the Company that it will not renew the existing
18 contract because it is planning to commence operation of two new plants in
19 Everett, Massachusetts this year (Mystic 8 and Mystic 9). Exelon has indicated to
20 Boston Gas that, based on a study performed by Boston Edison, the new Boston
21 Power Plant cannot physically operate at the same time as Mystic 8 and Mystic 9.

1 As a result, Exelon will no longer operate the aging New Boston or Mystic 7
2 plants on a full-time basis.

3 The amendment to the original agreement recently approved by the Department
4 provides that Exelon may terminate its agreement with the Company at any time
5 upon 60 days advance notice, and in any event, the contract will terminate on
6 March 1, 2004. The early termination provision was specifically negotiated by
7 Exelon to allow them to shut down the plants without incurring gas transportation
8 charges beyond the shut down date.

9 The Company adjusted test-year revenues by \$3,700,000 to remove the revenues
10 billed under the terms of this agreement in 2002. In addition, the Company
11 increased test-year revenues by the annualized amount of revenues associated with
12 a firm transportation agreement with Distrigas of Massachusetts (the "Distrigas
13 Agreement"), which will act as supplier to Exelon's Mystic 8 and Mystic 9 plants.
14 The Distrigas Agreement was approved by the Department in GC-01-04, with
15 service commencing on March 1, 2002. These calculations are set forth in
16 Exhibit KEDNE/AEL-2, at page 8, and result in a net reduction to test-year
17 revenues of \$3,446,482.

18 **Q. What is the adjustment for Unbilled Sales/Revenue?**

19 A. At the end of each calendar year, there is a difference between the amount of gas
20 the Company delivered to customers (sendout) and the amount of gas that the
21 Company has billed to its customers during that period. This amount of gas

1 represents "unbilled sales." Since the Company's weather normalization
2 adjustment of \$5,520,760 (Exhibit KEDNE/AEL-2 pages 2 and 3) is based on
3 billing data rather than sendout data, the Company must remove from test year
4 revenue, the accrual for the amount of unbilled gas and associated revenue. For
5 accounting purposes, the Company makes an entry each month to accrue the
6 amount of unbilled gas costs and gas revenues by multiplying an overall Company
7 average gas cost and billing rate to the difference between billing sales volumes
8 and sendout volumes. This estimate is trued up each August when the difference
9 between sendout and billing sales is not affected by the weather. Unbilled
10 revenues for December 2002 were calculated by subtracting gross unbilled
11 volumes for December 2001 from the gross unbilled volumes for December 2002.
12 The difference is then multiplied by the Company's average billing rate (to
13 determine unbilled revenues) and the average gas cost rate (to determine unbilled
14 gas costs). This produced unbilled net revenue for 2002 of \$4,681,950 (unbilled
15 revenue of \$15,926,040 less unbilled gas cost of \$11,244,090).

16 This Company used this same methodology in calculating revenues in compliance
17 filings under the first term of the PBR Plan. Therefore, consistent with
18 Department precedent, the Company reduced test-year revenues by \$15,926,040
19 and test year gas costs by \$11,244,090 to eliminate the unbilled sales accrual
20 booked during the test year. These calculations are set forth in Exhibit

1 KEDNE/AEL-2, at page 9 and result in a reduction to test-year net revenues of
2 \$4,681,950.

3 **Q. Please describe the Annualized Late Payment Charges adjustment.**

4 A. In 2002, revenues associated with late-payment charges totaled \$479,721.
5 However, the Company determined that the late-payment charge calculation had
6 been programmed incorrectly during the conversion of the CRIS billing system in
7 July 2002. The programming has since been corrected, however, revenue from
8 late-payment charges is understated in the test year as a result of this error. Since
9 the late-payment charges booked in the test year are not annualized, the Company
10 substituted the actual late-payment charges incurred from July 2001 to June 2002
11 as a proxy for the annual late payment charges in 2002. The actual late-payment
12 charges from July 2001 to June 2002 were \$1,118,138. Since the test year
13 included \$479,721 in late-payment charges, the Company increased test-year
14 revenues by \$638,418 to reflect the annualized late-payment revenue level. This
15 total is set forth at Exhibit KEDNE/AEL-2, at page 1.

16 **Q. What is the Weather Stabilization Adjustment?**

17 A. During the test year, the Company entered into an arrangement to mitigate the
18 effect of weather volatility. Because the weather was colder than normal for the
19 period covered by this arrangement, the Company experienced a net pay-out in the
20 test year. To account for this pay-out, the Company reduced its booked revenue
21 during the test year by \$2,970,000. Therefore, in determining test-year revenues

1 for ratemaking purposes, the Company has increased test-year revenues by
2 \$2,970,000 as shown in Exhibit KEDNE/AEL-2, at page 1.

3 **Q. Would you please explain the reason for the PBR Revenue Adjustment?**

4 A. Yes. On March 7, 2002, the Company received a decision from the Supreme
5 Judicial Court (the "SJC") in Massachusetts vacating the Department's ruling in
6 Boston Gas Company, D.P.U. 96-50-D (January 18, 2000). The Department's
7 decision in that case would have increased the Accumulated Inefficiencies factor
8 contained in the price-cap formula under the Company's performance-based
9 ratemaking plan (the "PBR Plan"). An increase in this factor has the effect of
10 reducing the revenues collected by the Company in the subsequent annual periods
11 covered by the PBR Plan. The SJC stayed the Department's order on February 7,
12 2000. Because the Company's rates were collecting revenue without giving effect
13 to the increased Accumulated Inefficiencies factor, the Company deferred the
14 revenues being collected through rates, pending the outcome of the Company's
15 appeal to the SJC. Once the SJC decision was issued, the Company booked the
16 deferred revenue, which increased test-year revenues. In this case, the Company
17 is adjusting test-year revenues to remove the revenue booked in the test year that
18 was applicable to deferred revenue from prior years. This adjustment is shown on
19 Exhibit KEDNE/AEL-2, at page 1, and has the effect of reducing test-year
20 revenues by \$3,864,000.

1 **Q. Please describe the DSM Incentive Adjustment.**

2 A. The DSM Incentive Adjustment removes the amount of revenue recorded by the
3 Company in relation to the incentives it achieved on the successful
4 implementation of its demand side management ("DSM") programs. This
5 adjustment is shown on Exhibit KEDNE/AEL-2, at page 1, and has the effect of
6 reducing test-year revenues by \$1,058,800.

7 **Q. Please explain the Energy Efficiency Revenue Adjustment.**

8 A. The Energy Efficiency Adjustment removes from the test year the amount of
9 revenue the Company billed to customers for the state-wide Energy Conservation
10 Service Program ("ECS"). The revenues associated with the Company's
11 participation in this program are collected through surcharges and not base rates.
12 This adjustment is shown on Exhibit KEDNE/AEL-2, at page 1, and has the effect
13 of reducing test-year revenues by \$495,356.

14 **Q. Please explain the Non-Firm Revenue Adjustment.**

15 A. The Non-Firm Revenue Adjustment removes from the test year the amount of
16 revenue the Company billed to non-firm customers under interruptible sales and
17 interruptible transportation. This adjustment is shown on Exhibit
18 KEDNE/AEL-2, at page 1, and has the effect of reducing test-year revenues by
19 \$6,274,641.

1 **Q. Please explain the Broker Revenue adjustment.**

2 A. The Broker Revenue adjustment removes from the test year the amount of revenue
3 billed to third party gas suppliers (brokers). Third party gas suppliers are billed
4 when the gas consumed by their transportation customers exceeds the gas the
5 brokers delivered to the Company's gate stations. This adjustment is shown on
6 Exhibit KEDNE/AEL-2, at 1, and has the effect of reducing test year revenues by
7 \$4,261,765.

8 **Q. Please explain the adjustment made to the Cost of Gas.**

9 A. The Company made a number of adjustments that reduced the test-year Cost of
10 Gas by \$46,891,270. Specifically, the Company reduced the test-year Cost of Gas
11 for gas costs associated with Unbilled Sales (\$11,244,090), Non-Firm gas costs
12 (\$6,186,618), Broker Revenues (\$4,236,326), ECS costs (\$356,857), and CGA
13 Recoverable Costs (\$25,588,070). The Company increased the test year cost of
14 gas for Non-Firm margin retention (\$641,891) and DSM Incentive Costs
15 (\$78,800). These adjustments are set forth in Exhibit KEDNE/AEL-3, at page 1.

16 **III. COST OF SERVICE STUDY**

17 **Q. What is the overall purpose of the COSS?**

18 A. Once the Company's revenue requirement is established in a base-rate proceeding,
19 the Company must develop rates for each customer class that are adequate to
20 recover the Company's cost of service balanced with policy considerations.
21 Therefore, the rate structure for any given customer class is a function of the cost

1 of serving that class and the rate design applied to recover that cost. Cost
2 allocation is the task of assigning a portion of the Company's total cost of service
3 to each rate class. This task is accomplished through a COSS, which analyzes
4 company-wide costs and revenues and allocates them to the various customer
5 classes based on cost-responsibility principles. Specifically, the COSS determines
6 the cost of serving each rate class, establishes the revenue requirements by season
7 for each rate class, and identifies whether cross-subsidies between rate classes
8 exist. The Company's COSS is also "time-differentiated" to account for the fact
9 that the Company's loads, costs and revenues may vary substantially between the
10 summer and winter months. Because of this variation, it is necessary to determine
11 the rate-class utilization of the Company's services during different time periods.

12 **Q. What are the overriding objectives of the COSS?**

13 A. The COSS is designed to achieve two main objectives in assigning costs and
14 revenues to individual customer classes, although other considerations may be
15 taken into account. These objectives are fairness and efficiency. Fairness is
16 achieved when each class bears responsibility for the costs that it imposes on the
17 system. Efficiency is achieved when customers are provided with an adequate
18 price signal to guide consumption in different time periods. Based on the results
19 of the COSS, the Company is able to determine whether each rate class, during
20 each time period, is paying its fair share of the costs that it imposes on the system.
21 In addition, the COSS is used as the basis for the marginal-cost study and for rate
22 design, which ensures that customers in each rate class are not only charged for

1 their total cost of service, but also are charged the marginal cost of service at each
2 point in time that they may take service. If rates are designed correctly, customers
3 will receive accurate economic "price signals" upon which to base their decisions
4 regarding the use of gas.

5 Although the principle of fairness requires that each customer class bear
6 responsibility for the costs that it imposes on the system so that cross-
7 subsidization is avoided, significant differences between the allocated test-year
8 costs and revenues for a given rate class may, for reasons of rate continuity, be
9 resolved by allocating the difference among all customer classes to reduce
10 disparities in the rates of return among customer classes. The Company also
11 attempts to allocate costs and design rates in a way that is rational and
12 understandable, as well as providing a level of earnings stability to the Company.

13 **Q. Will you explain the general methodology employed in cost of service**
14 **studies?**

15 **A.** Although different assumptions and conventions are used by various companies
16 and regulatory agencies, all cost of service studies address the fact that utility
17 accounting data is generally compiled and reported on a company-wide basis
18 rather than being disaggregated by customer class. Therefore, allocated cost-of-
19 service studies are designed to disaggregate a utility's costs in a series of
20 analytical steps, which ultimately yield the cost of serving each rate class. In a
21 time-differentiated study, costs are further allocated based on the relative class use
22 during the time periods when costs in each category are incurred. The first

1 priority is to directly assign revenues and costs that are classified by rate class. If
2 direct assignments can not be easily made, then allocation formulas are developed
3 based on cost causation.

4 **Q. What time periods are used to differentiate costs in the COSS?**

5 A. The Company's peak period is from November through April and the off-peak
6 period is from May through October. The throughput on the Company's
7 distribution system is substantially higher during the colder peak months than
8 during the off-peak months because of the relatively large proportion of
9 temperature sensitive load being served by the Company. The costs incurred to
10 satisfy demands for throughput levels are appropriately allocated to those rate
11 classes that use the system during the peak period. Accordingly, the Company's
12 rate design process uses the same peak and off-peak periods to set rates as is used
13 in the COSS to allocate costs.

14 **Q. What are the analytical steps employed in the Company's COSS?**

15 A. The Company's cost allocation process is accomplished in several steps,
16 consistent with Department precedent. In the first step, costs are "functionalized,"
17 or assigned to a group that describes a physical function that the costs are
18 associated with, i.e., local production and storage ("P&S") of gas, transmission
19 and distribution ("T&D") of gas, or other general and administrative ("G&A")
20 purposes.

1 In the second step, costs within each functional group are "classified" into one of
2 three categories according to the factor that is causing the cost to be incurred. For
3 example, costs within a functional group may be classified as: (1) demand or
4 capacity related, which are costs that are incurred to maintain or expand the total
5 capacity of the system to meet projected load in peak periods; (2) energy or
6 commodity related, which are costs that vary depending upon the volume of gas
7 distributed through the system; and (3) customer related, which are costs that vary
8 with the number of customers served. A similar classification system is applied to
9 billed revenues.

10 Third, the Company develops "allocators," to assign costs within each function
11 and each classification to the various customer rate classes in the peak and off-
12 peak period. For example, commodity costs may be allocated to each rate class
13 based on the proportion of gas throughput associated with each rate class. All
14 costs assigned to each rate class by time period are summed to yield the allocated
15 cost of serving the class during the peak and off-peak season.

16 Lastly, the Company compares the cost of serving each class to the revenues
17 generated by that class in the test year, as well as the Company's overall revenue
18 requirement, to determine whether the class is paying its fair share of the cost of
19 service during each time period. This step is designed to determine the rate
20 adjustment that will ensure that each rate class yields the same rate of return to the

1 Company, or to identify the extent of cross-subsidization if Department precedent
2 dictates that rates of return not be fully equalized among all classes.

3 **Q. Would you please describe the main exhibits that you are presenting as part**
4 **of your COSS?**

5 A. There are five exhibits supporting this testimony, which are Exhibit
6 KEDNE/AEL-4 through KEDNE/AEL-8. Exhibit KEDNE/AEL-4 reconciles the
7 total cost of service presented in the testimony of Mr. McClellan (Exhibit
8 KEDNE/PJM-2) with the allocated COSS detailed in Exhibit KEDNE/AEL-5.
9 Exhibit KEDNE/AEL-5 presents the allocated COSS for the total cost of service
10 (excluding purchased gas costs, local production and storage, gas acquisition
11 costs, and bad debts costs associated with gas costs). Exhibit KEDNE/AEL-6
12 presents the allocated COSS performed to determine the local production and
13 storage costs to be removed from base rates and recovered through the CGA.
14 Each of these exhibits sets forth the results of the Company's COSS, including the
15 subsidiary calculations that produced the Company's final conclusions. Exhibit
16 KEDNE/AEL-7 is a handbook entitled "Boston Gas Company - Cost of Service
17 Allocation Study Work Papers." This document, which is referred to hereafter as
18 the "Allocator Handbook," contains a glossary defining the various allocators
19 used in the Company's COSS. The Allocator Handbook also contains work
20 papers that explain the derivation of the allocators. Exhibit KEDNE/AEL-8 sets
21 forth the COSS performed to determine the embedded Customer Component used
22 to develop the customer charges for each tariff.

1 **Q. Does the Company's Cost of Service presented in Exhibit KEDNE/PJM-2**
2 **agree with the allocated COSS presented in Exhibit KEDNE/AEL-5?**

3 A. Yes. The Cost of Service analysis presented in Exhibit KEDNE/PJM-2 agrees
4 with the allocated COSS presented in Exhibit KEDNE/AEL-5, once all gas-
5 related costs, late payment charges, and special contract revenues have been
6 removed. The Cost of Service presented in Exhibit KEDNE/PJM-2 represents the
7 Company's bundled cost of service. However, all gas-related costs are now
8 recovered through the Company's CGA. Therefore, to design base rates, the
9 Company removed all gas-related costs from the allocated COSS model, including
10 actual gas costs and the associated bad debts, local production and storage costs,
11 and gas acquisition costs. Since the allocated COSS model found in Exhibit
12 KEDNE/AEL-5 is used to develop the revenue requirements for firm tariff
13 customers, the Company also removed revenues generated from late payment
14 charges and special contracts. Exhibit KEDNE/AEL-4 details the gas-related
15 costs and revenues removed from the Company's COSS.

16 **Q. How did the Company calculate the amount of bad debts associated with gas**
17 **costs?**

18 A. The Company first calculated the average ratio of firm gas costs to firm revenues
19 for the years 2000 through 2003. The resulting ratio of 56% was applied to the
20 2002 annualized cost of bad debts, which totaled \$11,203,982 (see Exhibit
21 KEDNE/PJM-2 page 22 line 12), plus the bad-debt adjustment of \$1,115,736 (see
22 Exhibit KEDNE/PJM-2, page 1 line 3) resulting from the rate increase. The

1 amount of bad debt relating to gas costs totals \$6,899,042. See Exhibit
2 KEDNE/AEL-4.

3 **Q. How did the Company calculate the amount of gas acquisition costs to be**
4 **removed from the COSS and recovered through the Company's CGA?**

5 **A.** The Company proposes to move \$483,947 relating to gas acquisition costs from
6 base rates to the CGA. The Company identified those costs related to gas supply
7 functions based upon employee time records (see Exhibit KEDNE/AEL-4).

8 **GENERAL DESCRIPTION OF ALLOCATORS**

9 **Q. In general, what is the purpose of the allocators that are used in the**
10 **Company's COSS?**

11 **A.** The allocators used in the Company's COSS, which are identified in the column
12 labeled "ALLOC," are designed to attribute costs to the proper rate class and time
13 period by causal component, by i.e., demand (capacity), energy (commodity) or
14 customer-related. In effect, each allocator identifies the proportion of total costs
15 to be distributed to each of the various rate classes for peak and off-peak periods.

16 Once the allocators have been applied to each of the Company's total accounting
17 costs, the Company sums these costs by time period, rate class, or causal
18 classification. Thus, for example, the model searches through each and every
19 allocated accounting cost to identify all the energy-related costs allocated to the
20 Residential Heating class for the peak period. The model totals these costs,
21 producing the total cost of serving each class by time period.

1 **Q. Are there different types of allocators used in the Company's COSS model?**

2 A. Yes. There are essentially two types of allocators, i.e., externally generated
3 allocators and internally generated allocators.

4 **Q. Would you explain the term "externally generated allocators"?**

5 A. The "externally generated allocators" are those allocators that are calculated
6 outside the computer model using external data supplied by the Company's
7 operating and accounting divisions. Data "external" to the computer model would
8 include data such as the Company's monthly sales figures by rate class, monthly
9 meter-reading costs and the number of meter reads for each rate class. All of the
10 externally generated allocators are defined in the initial pages of the Allocator
11 Handbook. Each of these allocators is actually derived in the schedules that are
12 included in the Allocator Handbook and the operation of certain of these
13 allocators is shown in Exhibit KEDNE/AEL-5, at page 17-19.

14 **Q. Can the externally generated allocators be easily classified?**

15 A. Yes, each of the externally generated allocators begin with the letter "C," "D" or
16 "E." These letters indicate whether the allocator is a Customer Allocator ("C"), a
17 Demand/Capacity Allocator ("D"), or an Energy/Commodity Allocator ("E").

18 **Q. What are the "internally generated allocators"?**

19 A. Internally generated allocators are calculated within the Company's COSS
20 computer model, rather than being developed using external data. These
21 allocators are set forth in Exhibit KEDNE/AEL-5, at page 20-22. In essence,

1 these internally generated allocators are "second generation" allocators meaning
2 that the allocators are derived from a combination of the outputs that resulted
3 from the application of externally generated (or "first generation") allocators to
4 the Company's raw (input) data.

5 For example, Allocator PTL36780 (Page 20, Line 22) is an internally generated
6 allocator. This allocator is created by summing two outputs produced by the
7 model, which are found on Lines 14 and 16, of page 2-1. Each of these outputs
8 was generated through the application of a different allocator to various Company
9 data. Allocator DEM11 (Proportional Responsibility) was applied to input from
10 Account 367 (Mains) to yield the output reported in Line 14. Allocator
11 CUST380 (Services) was applied to input from Account 380 (Services) to yield
12 the output result in Line 16. Allocator PLT36780 is, therefore, a "second
13 generation" allocator, internally derived by adding outputs that result from the
14 application of "first generation" external allocators to Company input data.

15 **Q. Why does the Company use both externally and internally generated**
16 **allocators in the model?**

17 A. Certain costs cannot be accurately allocated using a single "external" allocator,
18 and instead, require the aggregation or combination of several allocators. In that
19 case, the Company may use the model's capability to calculate these combined
20 allocators from "internal" data produced by the model. For example, Allocator
21 PLT36780 is derived from the application of two different external allocators, i.e.,
22 one to Account 367 (Mains) and one to Account 380 (Services), and is used in

1 turn to allocate the input from Account 874 (Mains & Services Expenses). This
2 allocation reflects the fact that the entries in Account 874 are for expenses
3 incurred in operating both mains, the pipes under streets, and services, pipes
4 leading to individual customer premises. Therefore, it is proper to allocate the
5 costs carried in Account 874 in a manner reflecting not just the allocator for
6 Mains, and not just the allocator for Services, but rather a combination of the
7 allocators for both types of costs.

8 **DETAILED DESCRIPTION OF ALLOCATORS**

9 **EXTERNALLY GENERATED ALLOCATORS - REVENUES**

10 **Q. How are the “externally generated” allocators organized in the Company’s**
11 **COSS?**

12 A. The COSS employs four categories of externally generated allocators: (1) revenue
13 and revenue adjustment allocators, (2) energy allocators, (3) demand allocators;
14 and (4) customer allocators.

15 **Q. How are the revenue and revenue-adjustment allocators used?**

16 A. As implied by the name, the revenue and revenue-adjustment allocators (the
17 “Revenue Allocators”) are not used to allocate costs. Rather, these allocators
18 assign overall revenues and revenue cost-of-service adjustments to each rate class
19 and time period. These allocators provide the opportunity to accurately compare
20 revenues to allocated costs and to determine whether each rate class in fact

1 generates sufficient revenues to meet the costs it imposes on the system during
2 each time-of-use period.

3 **Q. Would you briefly explain how each of the Revenue Allocators is derived?**

4 A. The detailed derivation appears in Schedules R-1 through R-5 of the Allocator
5 Handbook Exhibit KEDNE/AEL-7. Each schedule shows the derivation of a
6 different Revenue Allocator. Below is a brief summary of each Revenue
7 Allocator in the order in which they appear in the Allocator Handbook.

- 8 • EREV, Actual Commodity Revenue (Schedule R-1), and CREV, Actual
9 Customer Revenue (Schedule R-2), allocate two portions of base-rate
10 revenue. EREV allocates commodity base revenues and is derived by
11 subtracting customer revenues from total booked base revenues for each
12 class. CREV allocates customer revenue and is calculated by multiplying
13 the number of bills in each rate class by the class' monthly customer
14 charge.
- 15 • EBDAY, Billing Day Adjustment (Schedule R-3), is used to allocate the
16 billing day adjustment to account for the fact that the Company's test year
17 data does not reflect a 365.25 day year. This allocator is derived from the
18 Exhibit KEDNE/AEL-2 page 6.
- 19 • EWEAT, presented in Schedule R-4, reflects the weather normalization
20 adjustment described above (Exhibit KEDNE/AEL-2). Because general
21 ratemaking principles require that cost allocation be based on conditions
22 that are expected in a normal year, the Company has adjusted the test year
23 data to account for normal weather.
- 24 • EPEN, Penalty Charge Revenues (Schedule R-5), is monthly data showing
25 the actual penalty charges billed to each Commercial/Industrial rate class.

EXTERNALLY GENERATED ALLOCATORS -ENERGY

Q. Would you briefly explain how each of the Energy Allocators is derived.

A. The detailed derivation appears in Schedules E-1 through E-3 of the Allocator Handbook Exhibit KEDNE/AEL-7. Each schedule shows the derivation of a different Energy Allocator. Below is a brief summary of each Energy Allocator in the order in which it appears in the Allocator Handbook:

- ESALES Normal Calendar Firm Sales (Schedule E-1). This allocator sets out the Company's normalized sales, or the Company's sales for each rate class if those sales were billed on a calendar basis during the peak and off-peak periods in a year with "normal" weather. To make this calculation, the Company first normalized billing sales data for weather. The Company calculated the baseload (*i.e.*, non-weather sensitive) sales for each rate class and subtracted this from total sales to derive the heating load portion of sales. Heating load was normalized to account for the variation in actual degree days from normal weather. The normalized heating load was added to base load to provide the total normalized sales for the billing cycle. The Company then adjusted billing-month booked sales to calendar-month sales for each rate class. Billing cycle baseload sales are allocated to calendar months on the basis of calendar days. Heating load sales are allocated to calendar months on the basis of degree days.
- EAC912, Account 912 Expense (Schedule E-2) allocates demonstration and selling expenses to the identified classes.
- EAGROR, Administrative and General Expense (Schedule E-3), is allocated based on revenue requirements by rate class, excluding the values from the administrative and general expense accounts.

EXTERNALLY GENERATED ALLOCATORS – DEMAND

Q. Would you briefly explain how each of the Demand Allocators is derived.

A. The detailed derivation of these allocators appears in Schedules D-1 through D-3 of the Allocator Handbook (Exhibit KEDNE/AEL-7). Each schedule shows the

1 derivation of a different Demand Allocator. Below is a brief summary of each

2 Demand Allocator in the order in in which it appears in the Allocator Handbook.

- 3 • DEM11, Capacity Allocator (Schedule D-1), is an application of the
4 Proportional Responsibility ("PR") method of allocating capacity-related
5 costs. As approved in Boston Gas Company, D.P.U. 93-60 (1993) ("D.P.U.
6 93-60") and D.P.U. 96-50, the Company utilized design sales as the basis for
7 application of the PR analysis. The Company calculated design sales by
8 multiplying the design degree days by the heating use per degree day factors
9 for each class and adding the baseload factor for each class. Use of design
10 degree days is consistent with the fact that the Company's capacity planning is
11 based on design weather conditions, rather than on normal weather.
- 12 • DPROD, LNG and Propane Capacity and Expense (Schedule D-2), is used,
13 where appropriate, to allocate LNG and propane sendout costs that have been
14 classified as demand-related, as opposed to those classified as commodity-
15 related or customer-related.
- 16 • DP&S, Local Production and Storage Capacity (Schedule D-3), are isolated
17 and calculated in a separate COSS (Exhibit KEDNE/AEL-6) to determine
18 what, if any, amount of local storage will be recovered through the CGA.

19 **EXTERNALLY GENERATED ALLOCATORS – CUSTOMER**

20 **Q. Would you briefly explain how each of the Customer Allocators is derived.**

21 A. The detailed derivation for the Customer Allocators appear in Schedules C-1
22 through C-9 of the Allocator Handbook Exhibit KEDNE/AEL-7. Each schedule
23 shows the derivation of a different Customer Allocator. Below is a brief summary
24 of each Customer Allocator in the order in which it appears in the Allocator
25 Handbook.

- 26 • CUST380 Services (Schedule C-1), is the allocator the Company has derived
27 primarily to apportion the Services Account, or plant account, that includes all
28 connections between the Company's mains and customer meters.

1 This allocator (CUST380) is derived using a five step process based on the
2 methodology approved in D.P.U. 93-60 and D.P.U. 96-50. First, the Company
3 matched data between two databases: (1) the engineering service pipe
4 (SPIPE) database; and (2) the customer related information system (CRIS)
5 database. The SPIPE database contains service pipe data such as length, year
6 installed, size, material and installation address. The CRIS database contains
7 the rate class for each customer along with the customer's address. By
8 matching addresses contained in each data file, the Company can attach a rate
9 class to the service-pipe data. Second, the Company determined the number
10 of feet of service pipe by rate class, year, type (steel or plastic), and size of
11 pipe. Third, the Company derived the customer contributions to services
12 installations in each year, accounting for any changes in customer contribution
13 policies over time and applying the required customer contributions to new
14 service installations in each year. Fourth, the Company calculated the average
15 installed cost per foot of service pipe for each type and size of pipe in each
16 year. This average cost was derived by using current costs for each type and
17 size of pipe, and applying the Handy-Whitman index to restate the cost for
18 each year going back to 1919. Finally, the average cost was applied to the
19 total length of pipe installed in each year for each class, net of customer
20 contributions and summed by class to determine the Services allocator.

- 21 • CUST381 Meters and Meter Installations (Schedule C-2), is a direct allocator
22 based on the cost of supplying and installing meters for each rate class. A
23 meter code, indicating a meter type, is contained on each customer's billing
24 record and an average cost based on plant accounting records is applied to
25 each code to arrive at meter costs, which are summed for the customer class
26 total.
- 27 • CUST901 Customer Accounting Supervision (Schedule C-3), allocates the
28 costs attributable to supervision of the employees of the customer-accounting
29 areas. Costs for this account were first allocated to the residential and
30 commercial categories based on the overall residential and commercial
31 allocator developed in CUST903 and then further allocated to individual rate
32 classes according to the number of customers in each rate class.
- 33 • CUST902 Meter Reading (Schedule C-4), is a direct allocator based on the
34 annual cost attributable to meter reading for each rate class. This includes
35 both automated and non-automated meters in each rate class.
- 36 • CUST903 Customer Records and Collections (Schedule C-5), was developed
37 in a two part process. First, the costs for specific functions (i.e.- Customer
38 inquiry, Customer billing, and Customer collections) were identified and then
39 allocated to residential and commercial category based on the time spent on
40 performing these tasks. All the remaining indirect costs contained in Account

1 903 were then allocated to the residential and commercial category based on
2 the overall percentages determined in step one. The cost allocated to the
3 commercial category was further allocated to the specific commercial rate
4 classes according to the number of customers in each commercial rate class.
5 The cost allocated to the residential category was further allocated to the
6 specific residential rate classes according to the number of customers in each
7 residential rate class.

- 8 • CUST904 Uncollectible Accounts – Non Gas (Schedule C-6), is a direct
9 allocation to the Residential classes and to the Commercial/Industrial classes
10 in aggregate based on historical records of uncollectible accounts
- 11 • CUST905 Miscellaneous Customer Accounting Expenses (Schedule C-7),
12 allocates the costs not attributable to any direct customer accounting area.
13 Costs for this account were first allocated to the residential and commercial
14 categories based on the overall residential and commercial allocator developed
15 in CUST903 and then further allocated to individual rate classes according to
16 the number of customers in each rate class.
- 17 • CRCS Energy Conservation Service Revenues (Schedule C-8), is derived
18 directly from Company data by rate class.
- 19 • CDEP Customer Deposits (Schedule C-9), is a direct allocator based on
20 Marketing Department system accounting data by rate class.

21 **INTERNALLY GENERATED ALLOCATORS**

22 **Q. Please comment on the internally generated allocators used in the Company's**
23 **COSS.**

24 **A.** There are two major categories of internally generated allocators -- Plant
25 Allocators and Labor Allocators. Exhibit KEDNE/AEL-5 at pages 20-22 shows
26 how these allocators distribute costs among the various rate classes and time
27 periods.

1 **Q. Would you discuss the allocator entries in Exhibit KEDNE/AEL-5 that begin**
2 **with the prefix "PLT?"**

3 A. In Exhibit KEDNE/AEL-5, a prefix is intended to designate that the allocator is
4 derived from a single other output. If the allocator begins with an X or EXP, it
5 represents an output string from an operating and maintenance ("O&M") expense
6 account allocation. An allocator that begins with TLAB or LAB indicates that the
7 allocator is based upon a labor allocation. Lastly, if the allocator begins with a
8 PLT, it indicates a plant-based allocation.

9 **DETAILED DESCRIPTION OF EXHIBIT KEDNE/AEL-5**

10 **Q. Now that you've explained the derivation of the various allocators, would**
11 **you explain the set up of Exhibit KEDNE/AEL-5?**

12 A. Exhibit KEDNE/AEL-5 shows the application of the Allocators and the output
13 allocated to various rate classes and time periods. The input data from the
14 Company's test year costs and revenues are discussed in the testimony of Mr.
15 McClellan.

16 Pages 1-1 through 1-7 are a summary showing the rate of return during the 2002
17 test year for each rate class and time period. For various rate classes, the rate of
18 return was less or greater than the Company average, showing the existence of
19 cross subsidization.

1 Pages 2-1 through 2-7 allocate the Company's rate base by rate class and time
2 period. In addition, these pages allocate the total gas plant in service, categorized
3 into Production, Storage, T & D and General Functions.

4 Pages 3-1 through 3-7 allocate the Company's depreciation reserves in the same
5 fashion as gross plant in service in Page 2.

6 Pages 4-1 through 4-7 show the various adjustments to gas plant, which are
7 necessary to arrive at the Company's total rate base. In addition, these pages
8 allocate and classify gas plant.

9 Pages 5-1 through 5-7 allocate the Company's distribution revenues including
10 revenues from production and storage contained in the CGA by rate class and time
11 period. Lines 12 through 19, which show test year revenue adjustments, are
12 deducted from the revenue requirement prior to designing the Company's base
13 rates.

14 Pages 6-1 through 6-7 show the allocation of the Company's expenses. Pages 6
15 through 10 allocate the Company's Operations and Maintenance ("O&M")
16 expenses. Page 6 contain O & M expenses for manufactured gas.

17 Pages 7-1 through 7-7 set forth the Company's local storage expenses.

18 Pages 8-1 through 8-7 set forth O & M expenses incurred in the transmission and
19 distribution of gas.

1 Pages 9-1 through 9-7 include customer-account expenses, customer-sales
2 expenses, and administrative and general expenses.

3 Pages 10-1 through 10-7 include various adjustments to the 2002 test year.
4 Page 10, Line 32, provides the adjusted overall Operations and Maintenance
5 expenses.

6 Pages 11-1 through 11-7 deal with depreciation expenses, grouped by functions
7 (Production, Storage, T & D and General), and include amortization of leasehold
8 improvements and test year adjustments to depreciation and amortization expense,
9 allocated by rate class and time period.

10 Pages 12-1 through 12-7 allocate taxes other than income taxes, including payroll
11 taxes, property taxes, and excise taxes, along with test year non-income tax
12 adjustments, and Pages 13-1 through 13-7 address income and franchise taxes as
13 calculated on test year revenues and adjustments.

14 Pages 14-1 through 16-7 explain the development of the Company's Labor
15 Allocator. These are subsidiary schedules and the results of these labor
16 allocations are included in the total Operations and Maintenance expenses set out
17 in preceding schedules. For example, the labor allocated in Page 14 is a portion
18 of the total O & M expenses in Pages 6 and 7; the labor allocated in Page 15 is
19 part of the total O & M expenses found in Page 8; and the labor allocated in Page
20 16 is part of the total O & M expenses set out in Page 9.

1 Pages 17-1 through 22-7 show the operation of the Company's allocators, and
2 Pages 23-1 through 28-7 correspondingly show the operation of each of the
3 allocators on a percentage basis, i.e., the ratios by which the various allocators
4 distribute the Company's costs.

5 Pages 17-1 through 19-7 show the operation of the Company's external allocators,
6 including the demand-related allocators (Page 17); the commodity-related
7 allocators (Page 18); and the customer-related allocators (Page 19). Pages 20
8 through 22 show the operation of the internally-generated allocators.

9 Pages 23-1 through 28-7 follow the same order as Pages 17 through 22. As noted,
10 the later pages set forth the allocators in a manner showing the percentage of the
11 Company's costs allocated to each rate class.

12 Pages 29-1 through 31-7 deal with the revenue reallocations which will be
13 necessary to equalize rates of return among rate classes and time periods. Pages
14 29 and 30 are summary schedules, which develop the necessary revenue changes.
15 Page 31 is a supporting table, which simply shows the recalculation of federal
16 income taxes and state franchise taxes based on the assumption that rates of return
17 will be equalized across rate classes and time periods. Page 31 is the source of the
18 numbers found in Lines 32 and 33 of Page 30.

1 **Q. Page 1, Page 29 and Page 30 are described above as “summary schedules.”**
2 **Please explain those schedules in detail.**

3 A. Page 1 summarizes the Company’s current status, setting out the actual rate of
4 return for each rate class during peak and off-peak periods. Lines 1 through 18
5 show the allocation of rate base by classification and by peak and off-peak
6 periods. Lines 20 through 26 set forth the Company’s base revenues, which are
7 total revenues minus gas cost revenues. Like rate base, these are allocated by rate
8 class and by peak and off-peak periods. Lines 28 through 40 provide the
9 Company’s operating expenses, similarly allocated. The allocated actual rate of
10 return, reported in Line 44, is derived from the allocated net operating income
11 (Line 42) and the allocated rate base (Line 18). For the Company as a whole in
12 2002, the normalized overall rate of return adjusted for known and measurable
13 changes was 5.50%, (Page 1-1, Line 44), with allocated returns for various
14 classifications ranging from a negative return (loss) of 16.3% to a positive return
15 of 18.9%. The relative rate of return, expressed in Line 45, is simply a ratio of the
16 actual rate of return for a rate class (Line 44) to the Company’s overall 5.50% rate
17 of return.

18 Page 30 should be considered next. Pages 30 presents the “ideal” cost allocation,
19 and is a pro forma restatement of Page 1 with the rate of return equalized for all
20 rate classes and for all periods, both peak and off-peak, at a level equal to a
21 10.13% rate of return presented in Company testimony in this proceeding. Lines
22 1 through 17 remain the same as the corresponding lines in Page 1; the allocated

1 rate base is a given and does not change. Operating Expenses (Lines 28 to 35)
2 also are given and do not change, except for the adjustment in federal and state
3 taxes as a result of pro forma changes in net operating income and rate of return.
4 These adjusted tax lines, as noted previously, are derived from Page 31. Line 37
5 (net operating income - equalized) shows the figure that ensures each rate class,
6 for each period, would return 10.13%. Line 26 of Table 30 shows the total
7 operating revenue necessary to yield that net operating income, and Line 25 is a
8 new line showing the necessary revenue increase or decrease from actual 2002
9 test-year normalized revenues for the total Company and for each rate class and
10 time period.

11 Page 29 is the final summary schedule to be considered. Lines 1 (rate base), 5
12 (sales revenue at present rates), and 16 (sales revenue requirements), are passed on
13 to the rate design model as the basis of the class return requirements by season.
14 Line 23 of the schedule shows the revenues from the sale of gas required for each
15 customer classification and use period in order to yield the 10.13% rate of return
16 and to equalize the Company's return by rate class and use periods, i.e., the
17 revenue changes that would move the Company from Page 1 to Page 29.

18 **Q. Does this conclude your testimony?**

19 **A. Yes.**